

## **TROPICAL RAINFALL MEASURING MISSION**

**July 3, 2000 - July 9, 2000**

**DOY 185 - 191**

**Day of Mission 948 - 954**

### **TRMM MISSION OPERATIONS**

- TRMM is flying in the -X Forward direction as of 00-187, at 14:41:36z.
- Yaw maneuver #44 is scheduled for July 19th (00-201).
- Delta-V maneuver #208 is scheduled for July 11th (00-193), using the ISP thrusters.
- The Beta angle range for 00-192 through 00-198 is  $-10.7^{\circ}$  to  $-8.6^{\circ}$ , peaking at  $-13.2^{\circ}$ .
- The next Monthly Status Review is scheduled for August 2nd (00-215).
- The next CCB meeting is scheduled for July 13th (00-195).
- There are 176 days remaining until Extended Mission science operations begin (1/1/2001).

### **TRMM SUBSYSTEM OPERATIONS**

#### **Attitude Control System (ACS)**

00-185 (Monday, July 3rd)

Delta-V maneuver #206 was successfully conducted at 15:05:42z and 15:51:34z for durations of 46.5 and 19.875 seconds respectively, using the LBS thrusters. The off-modulation of the -Yaw (#1) and +Pitch thrusters (#2) for burn 1 was 7.8% and 24.2% (92.2% and 75.8% on time). The off-modulation of the +Pitch thruster (#2) for burn 2 was 17.6% (82.4% on time). The remaining fuel is 560.598 kg, and the final apogee and perigee height is 354.84 km x 347.52 km.

00-187 (Wednesday, July 5th)

Yaw Maneuver #43 ( $180^{\circ}$  to -X forward) was successfully conducted at 14:41:36z.

00-189 (Friday, July 7th)

Delta-V maneuver #207 was successfully conducted at 14:57:00z and 15:46:10z for durations of 39.0 and 20.25 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burns 1 and 2 was 39.7% and 39.5% (60.3% and 60.5% on time). The remaining fuel is 559.231 kg, and the final apogee and perigee height is 354.85 km x 347.47 km.

#### **Flight Data System (FDS)/Command & Data Handling (C&DH)**

The current frequency standard offset remains x'796' with a current drift rate of  $-2.3 \mu\text{s/hr}$ . The UTCF was adjusted by  $-956 \mu\text{s}$  on 00-185 at 23:55z and is now 31535996.842911 seconds. The current drift value is  $-339 \mu\text{s}$ .

EDAC multi-bit errors occurred on 00-187 at 15:37:33z and on 00-190 at 19:41:13z.

Q-channel restarts occurred on 00-186 at 05:23:14z, 00-187 at 10:14:47z, and on 00-190 at 16:09:42z.

## **Reaction Control Subsystem (RCS)**

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

## **Power Subsystem**

The Power subsystem operated nominally during this period.

00-185 (Monday, July 3rd)

The state of charge counter C/D ratio was adjusted to 1.01 at 17:27z (CR #397).

## **Electrical Subsystem**

The Electrical subsystem operated nominally during this period.

## **Thermal Subsystem**

The Thermal subsystem operated nominally during this period.

## **Deployables Subsystem**

The Deployables subsystem performed nominally during this period.

## **RF/Communications Subsystem**

The RF/Communications subsystem performed nominally during this period.

## **SPACECRAFT INSTRUMENTS**

### **CERES**

The CERES instrument remains in Safe Mode following the DAP microprocessor telemetry dropout which was reported last month (AR #82).

00-187 (Wednesday, July 5th)

The SWICS Lamp intensity was turned off and returned to its nominal state (CR #400) at 14:00z. Microprocessor patches (MUX tables) were uplinked at 15:30z, 16:37z, and 18:15z (CR #401-403) to dwell on different telemetry points. The DAP microprocessor was reset at 20:36z (CR #404) in an attempt to return to science operations capability.

### **LIS**

LIS performed nominally during this time period.

### **PR**

PR performed nominally during this time period.

The list of Internal Calibration times over Australia in which PR was not radiating is below:

2000/185:00:59:17 - 01:01:02z  
2000/185:23:47:22 - 23:49:31z  
2000/186:16:05:39 - 16:09:55z  
2000/186:22:36:08 - 22:38:22z  
2000/187:22:58:55 - 23:01:03z  
2000/188:15:17:14 - 15:18:30z  
2000/188:21:47:19 - 21:49:32z  
2000/189:14:07:18 - 14:09:31z  
2000/189:22:09:52 - 22:11:59z  
2000/190:20:58:36 - 21:00:47z  
2000/191:13:16:50 - 13:21:23z  
2000/191:21:21:23 - 21:23:26z

## **TMI**

TMI performed nominally during this time period.

## **VIRS**

VIRS performed nominally during this time period.

## **GROUND SYSTEM**

Over the past two weeks, Siglet handovers at White Sands have resulted in the deletion of Confirmed Events which are still reported as valid at the NCC and at the MOC (ER #185). This is a recurrence of a problem that was first reported last year when the MOC experienced a Non-Acquisition on a Confirmed Event that was actually dropped from the White Sands system following a Siglet handover. This problem can potentially affect any day that is in the White Sands system up to a week in the future without any record of the loss, because there is no mechanism in place to compare the confirmed events from before the handover to the events after the handover.

In addition, if the Mission Planner does find that an event has been dropped, typically the entire day's events need to be removed and then re-added as a precaution in order to ensure the complete confirmed events schedule is correct and up to date at White Sands. The following events were dropped and had to be re-added this week to avoid any data loss: 00-185/22:51z TDS; 00-186/18:25z, 21:39z, 23:30z TDS; Seven events for TDS and 171 on 00-188 and 00-189; 00-190/16:04z 171.

The TDE/SSA1 00-186:13:29z event was moved to 13:34:32z by NCC Scheduling (ER #186) due to another user with a critical support need. All data was recovered manually on the moved event.

During the TDW/1521z event on 00-188, the MOC experienced multiple CRC errors on the I-channel (ER #187). The errors were intermittent and lasted from 15:29z to 15:32z. Q-Channel science data was not affected. On the TDS/17:37z event the CRC errors returned, this time starting prior to AOS (17:32z) and lasting until 17:43z. Again no data was lost, although commanding ability was interfered with briefly. The problem was resolved by the CD-Manager (attributed to line problems) prior to the following event.

The hard drive on the new PTP-1 was replaced on 00-189 (July 7th) and after two days of parallel operations with the backup PTP-3, PTP-1 was officially returned to operational status.

FDF ephemeris products were affected from July 1st through July 6th (ER #188) due to an FDF software problem involving a hard-coded leap second. The ephemeris files did not start at 00 seconds and were therefore not recognized by the Mission Planning (MP) system. This problem affected the MP system's ability to ingest these files, so that the older products had to be used until the problem was resolved. Other affects included incorrect orbit numbers on several of the products that were posted by TSDIS on their informational website as well as TSDIS's ability to perform science data processing.

### **Event Reports**

#185: MOC Confirmed Events Dropped Following Siglet Handovers: Continued from last week.

#186: 00-186:13:29z TDE/SSA1 event moved to 13:34:32z by NCC Scheduling.

#187: 00-188:15:21z TDW/SSA1 event experienced numerous CRC errors.

#188: MOC Ephemeris products invalid from 00-183 to 00-188.

### **Generic Late Acquisition Reports (for TTRs 19639)**

No new Generic Late Acquisition Reports were generated during this period.

### **New Anomaly Reports**

No new Anomaly Reports were generated during this period.

### **Recurring Open Anomaly Reports**

No Open Anomalies were observed during this period.

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